SURE electronics

GPS Demo Board
User's Guide

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User's Guide

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Chapter 1. Brief Introduction and Port Definition

1.1. Product

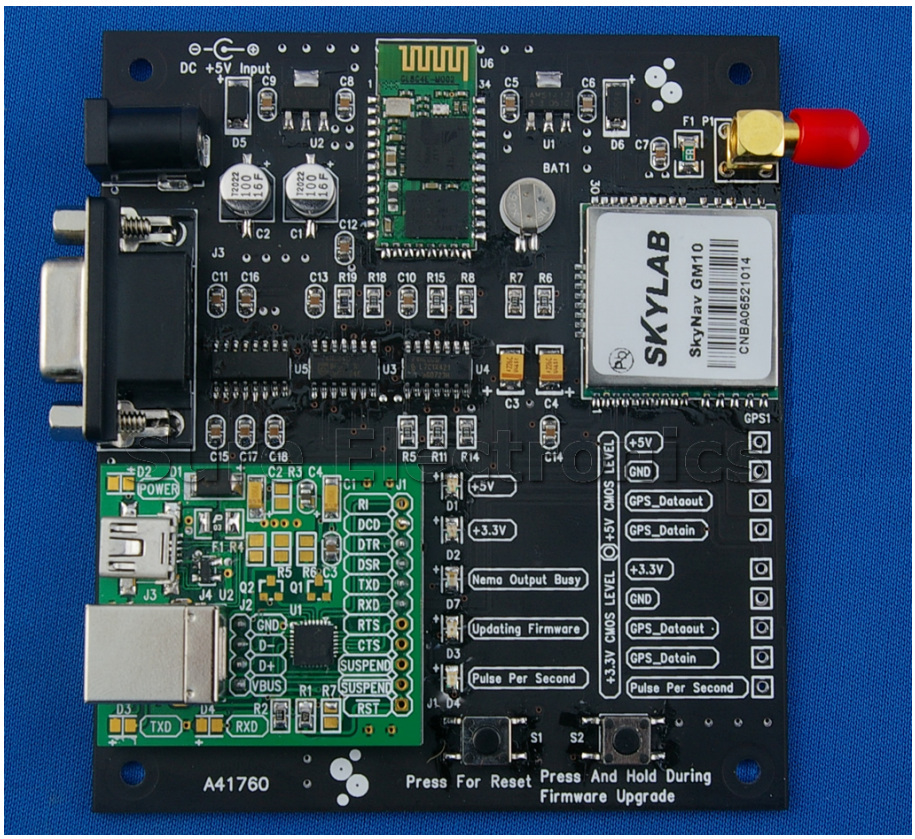


Figure 1

1. Great for GPS based tools or appliance development.

2. Three useable ports, USB->UART Bridge based on CP2102, legacy RS232 port, and an optional Bluetooth simulated RS232 port.

3. Module compatible with Ublx TIM-LC module in pin out.

4. Module use uNav 8130 baseband processor, 1008 RF front-end, 4th generation, -152dbm sensitivity.

5. Low power consumption

6. Could locate with the antenna inside the room and 1 meter away from the window (normally when over 6 satellites in view site).

7. Orion Analyzer software and U-Center software provided, Baud rate, NMEA output package selectable. (GPS module baud rate is constant 9600bps.)

8. Pulse per second signal selectable. (Not in the standard Rom, could be flashed into the module, we would not provide any warranty if the module failed in update.)

9. All 3 communication method could work together. All 3 ports could control the module and accept NMEA data.

10. USB port and Bluetooth port can not modify the baud rate. User can only modify NMEA output package through these 2 ports.

11. Through RS232 port, all parameters could be modified.

12. Update may cause module fail permanently, and will cause warranty void. If user wants to do update, a RS232 port should be used (not USB bridged type) to update firmware.

13. Bluetooth optional. Communication password is 1234.

1.2. Accessories

Figure 2

1. One active antenna

2. One USB Connecting Line

Chapter 2. Fast Guide

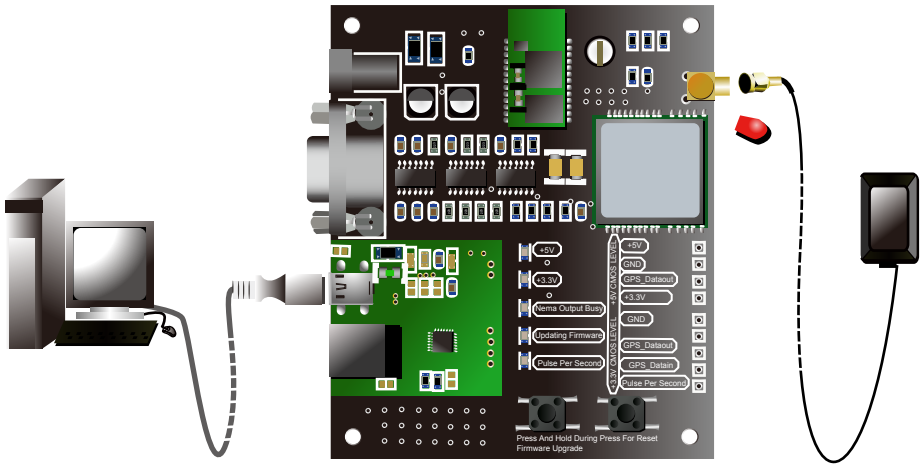


Figure 3

1. Connect the SMA connector of the Active antenna to the demo board and tie the screw (Shown in Figure 1). Put the antenna to outdoor and keep the top side face the sky. The antenna has integrated magnet, so it can be magnetized on any iron surface such like roof of your car. Try to place it with a large viewable angle of the sky, if covering with any metal material, the signal would be weak.
You could only use 3.3V type active antenna with this demo board, 5V active antenna will not work. Keep the top of the antenna face the sky, or the signal may be too weak. Most active antennas are anti water type, they could work in raining days.

2. Connect the USB->UART Bridge based on CP2102 to your host computer with the USB connector. And tie miniusb to the demo board. Power your host computer and install the driver.
This GPS module is compatible with NMEA2.1 protocol, so it could work with most GPS software that accepts NMEA protocol. For testing use, you could find Orion Analyzer software and u-center evaluation software in the accessory CD. It is only for testing and studying use. We do not provide any support on how to use Orion Analyzer and u-center, please view the user's guide from Orion Analyzer and u-center carefully. And notice don't try update firmware with Orion Analyzer or u-center, it may damage your module.
Your demo board should work after those steps, if you have any further questions, please refer to the schematics and user's guide carefully, and you could also email to *support@sure-electronics.net*, we will try to solve all questions.

Chapter 3. Schematics and Physical Dimension

3.1 Schematics

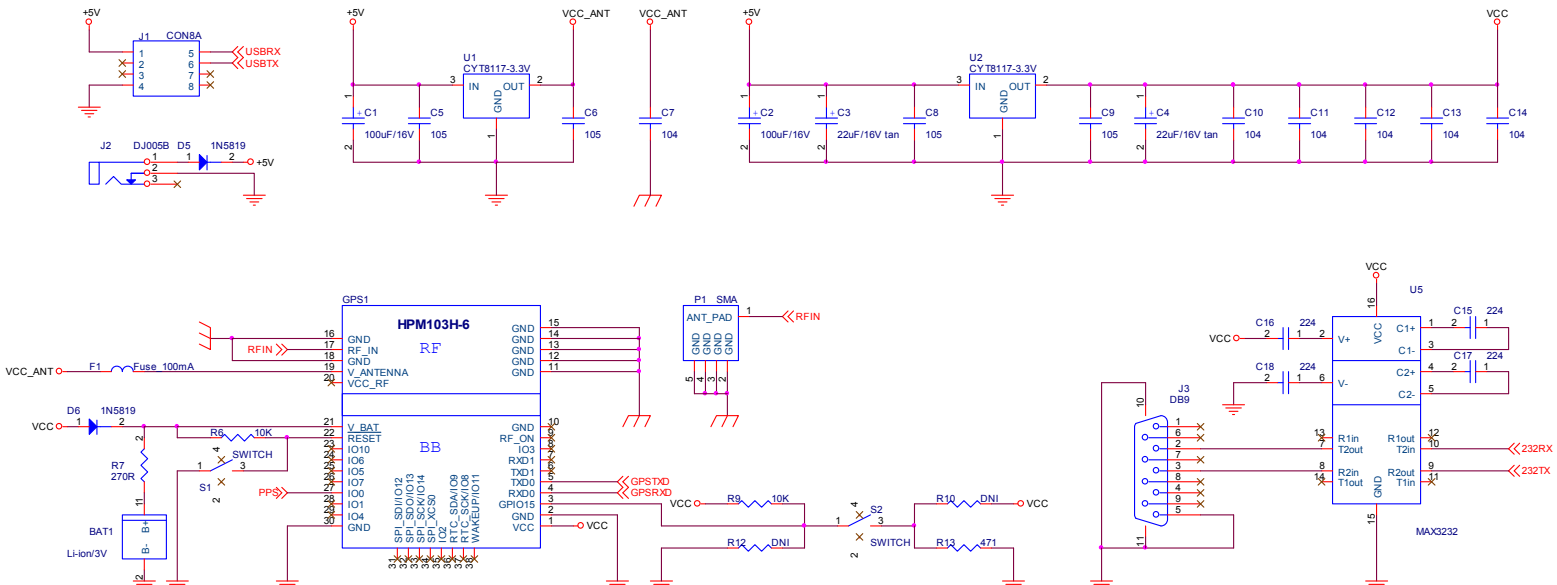


Figure 4

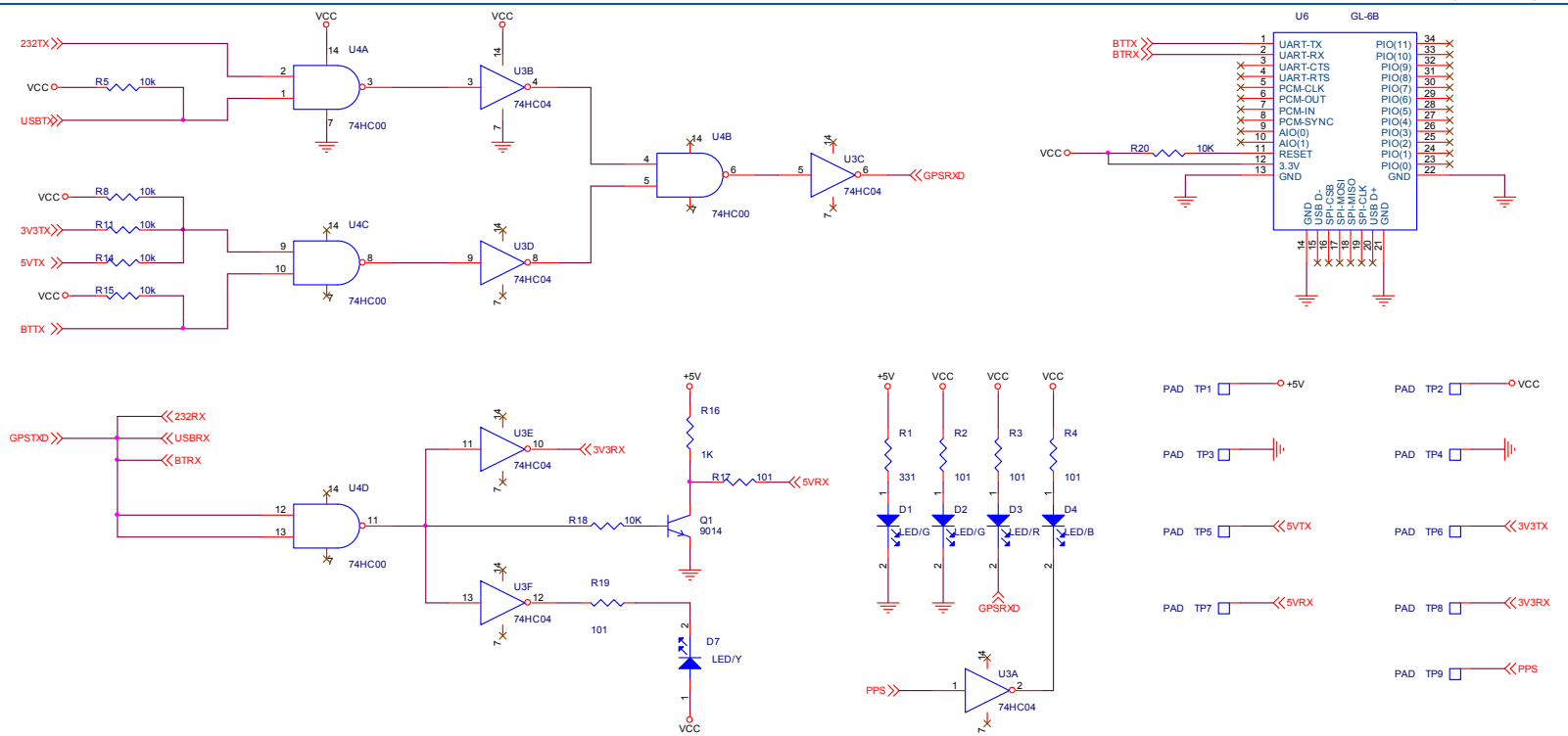
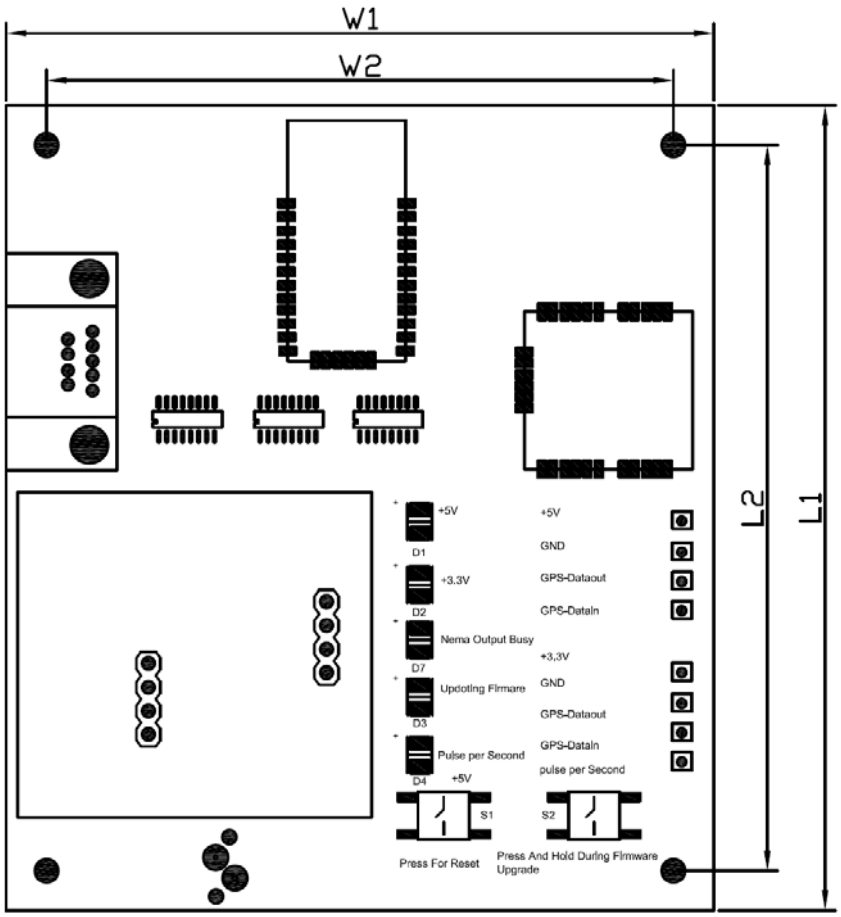


Figure 5

Notice: The above schematics are just for reference. There may be a little difference in production batch.

3.2 Physical Dimension



Symbol	W 1	W 2	L1	L 2
Inch	3500	3100	4000	3600
mm	88.90	78.74	101.6	91.44

Figure 6

Chapter 4. Software and Sample Codes

4.1 PC Software Users Guide

4.1.1 How to use Orion Analyzer

1. Open Orion Analyzer. It could be located by the following operation: Start→ All Programs→uNav→Orion Analyzer→Orion Analyzer. When the program is running, you will see a window as shown in Figure 9.

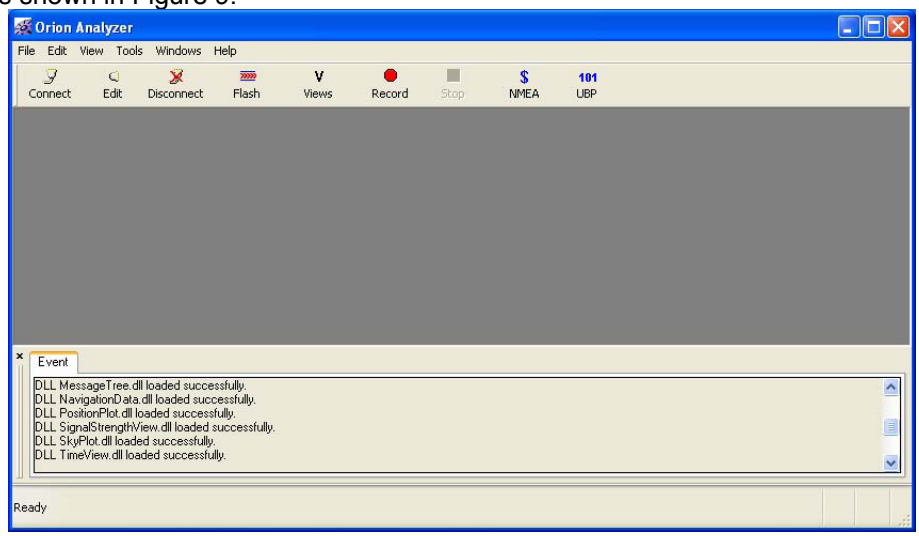


Figure 7

2. Click icon on the toolbar to open “New Connection” dialog box. Select port from the pull-down menu of “Port”. Interface built in RS-232 to UART is COM1-2 normally, but that built in modem of laptop is COM3 normally. USB-RS232 adapter use COM3-8, and Bluetooth adapter will occupy COM4-15. In some occasions the situation may be changed. User can choose right port according to above presentation. Select right baud rate from the pull-down menu of “Baudrate”, for example, most GPS modules use 4800 as default, but as to GPRS modules and some other devices, it is 9600 or other baud rate adjusted by themselves. Baud rate of this product is set 9600 before shipping. Modification of this value is not suggested. Otherwise product may be failed. Click “Create” button to finish setting New Connection. As shown in figure 10.

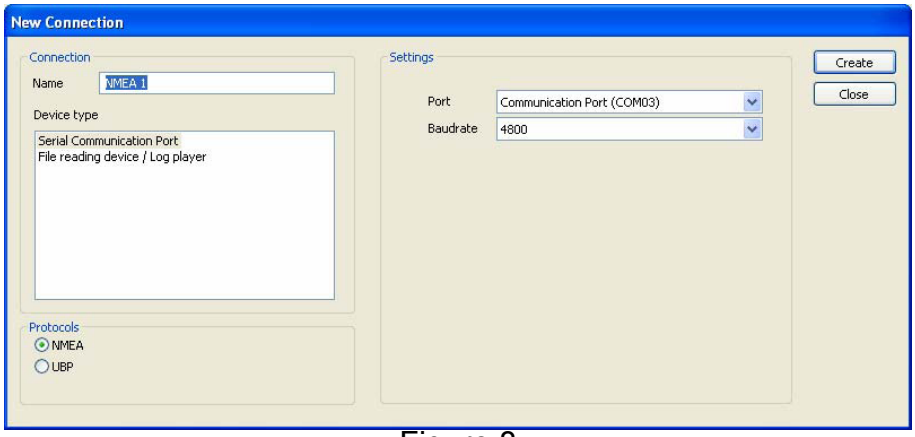


Figure 8

If it has already connected to PC, you will see the port is opened in the bottom. After 1-5 minutes, you will see a window as below.

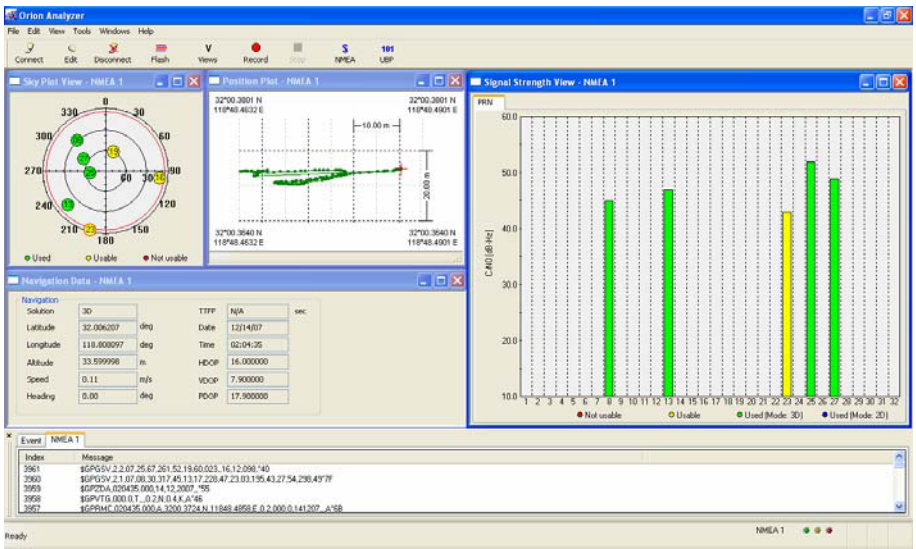


Figure 9

3. You could refer to the user's guide of Orion Analyzer for more information.

4. Every demo board was tested for 3 times before shipping. If it could not run, please make sure that the connection is correct.

5. It can work with almost all navigation software, and its setting is similar to Orion Analyzer. You could check the user's manual of those software for more information.

4.1.2 How to set baud rate

Baud rate can be set via Orion Analyzer as to serial interface. Click icon on the toolbar. Then select "Output Configuration" from the pop-up dialog box to activate the pull-down menu of baud rate. You can select right baud rate. Click "Sent" button. If the message box at the bottom of

the window is said that “The message has been sent”, it means that baud rate has been set. Click “Close” button to close this dialog box. If product can receive and send message normally, baud rate has been modified successfully.

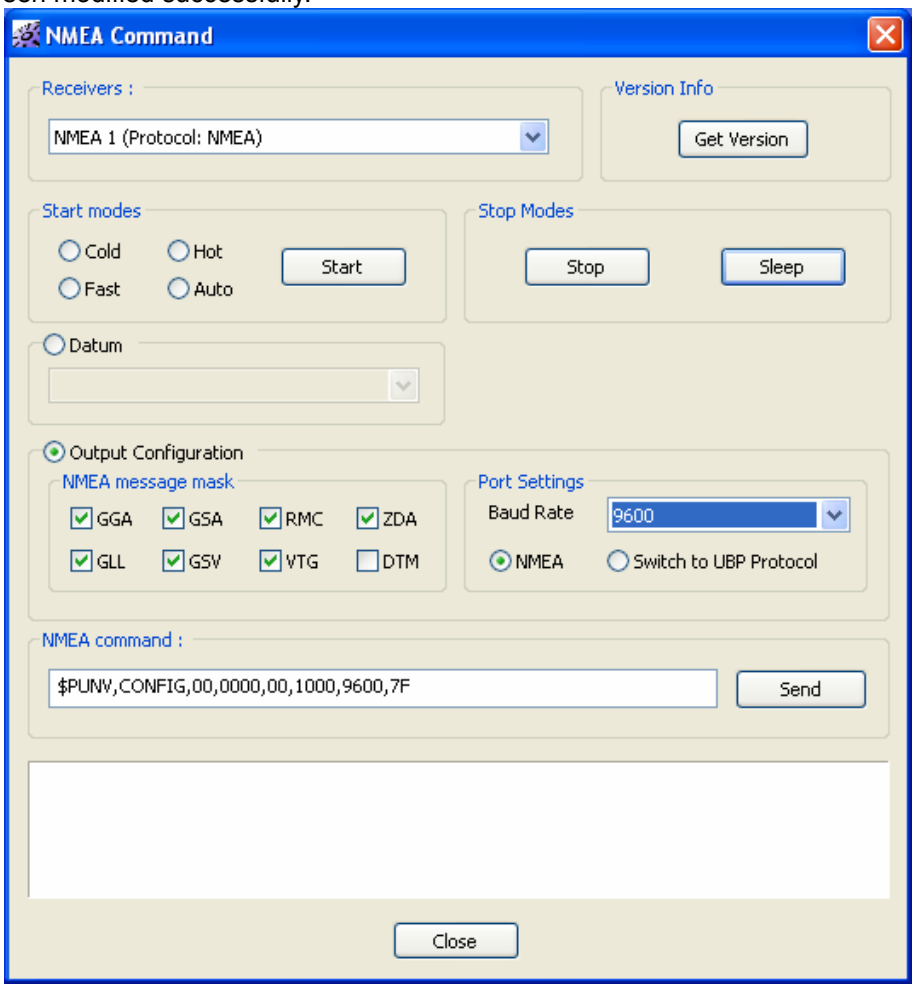


Figure 10

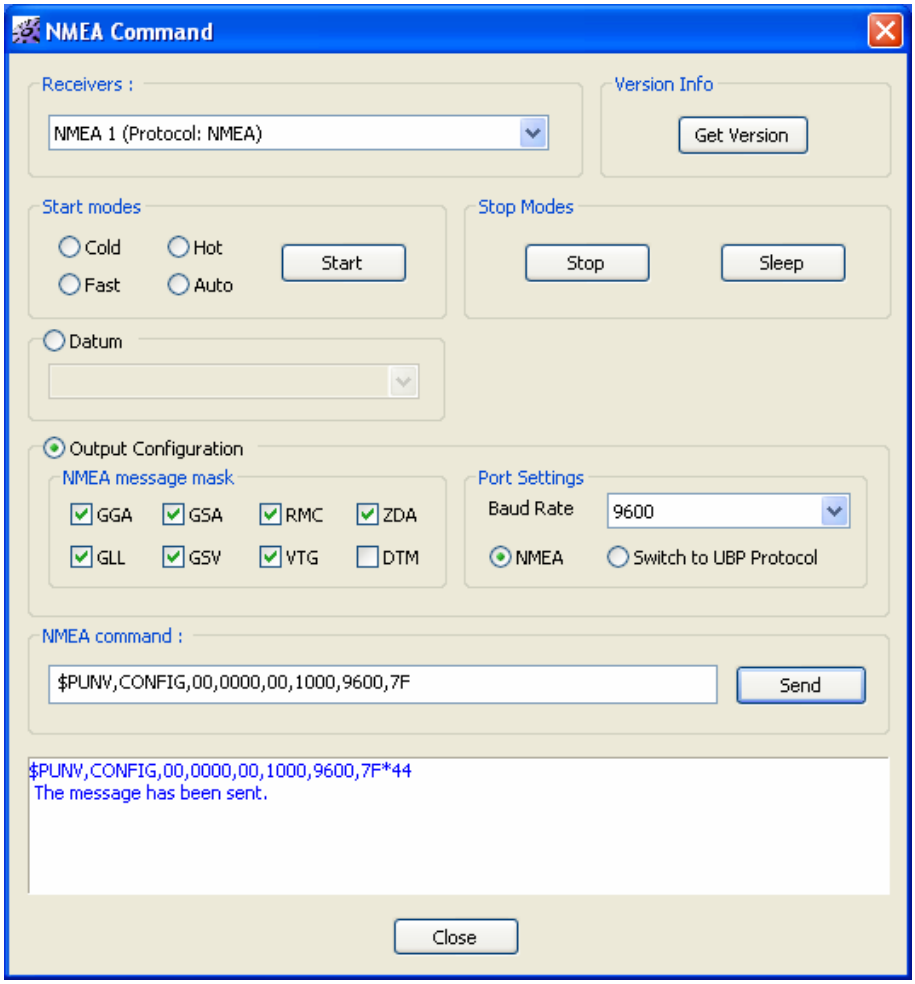


Figure 11

Notice: Improper modifications maybe damage the product.

4.2 Sample Codes

N/A

Chapter 5. Contact US

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